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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,731	03/10/2004	Seiji Aoyagi	020859-002810US	5013

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EXAMINER	
BELLAMY, TAMIKO D	
ART UNIT	**PAPER NUMBER**
2856	

DATE MAILED: 05/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/798,731	AOYAGI ET AL.
	Examiner	Art Unit
	Tamiko D. Bellamy	2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-12 and 14* is/are rejected.

7)☒ Claim(s) *13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Oath/Declaration

1. It does not identify the mailing address of each inventor. A mailing address is an address at which an inventor customarily receives his or her mail and may be either a home or business address. The mailing address should include the ZIP Code designation. The mailing address may be provided in an application data sheet or a supplemental oath or declaration. See 37 CFR 1.63(c) and 37 CFR 1.76.

Election/Restrictions

2. Applicant's election without traverse of Group 1, claims 1-14 in the reply filed on 3/25/05 is acknowledged. It is acknowledged that claims 21-24 are canceled without prejudice.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-7, 9-12, and 14 rejected under 35 U.S.C. 102(b) as being anticipated by either Kalnitsky et al. (5,982,608) or Kalnitsky et al. (6,110,791).

Re claim 1, Kalnitsky et al. '608 or '791 discloses a variable capacitor suitable for use in accelerometers (Col. 1, lines 29-32). As depicted in figs. 1, 3, 3A, Kalnitsky et al. '608 or '791 discloses a substrate (24) bearing a first electrode (e.g., conductor 18) coplanar with a second electrode (e.g., conductor 20). Kalnitsky et al. '608 or '791 discloses a dielectric seismic mass (e.g. flexible membrane of dielectric material (14))(Col. 2, lines 56-58) separated from the electrodes (e.g., conductors (18, 20) by a gap (e.g. cavity 34).

Re claim 2, Kalnitsky et al. '608 or '791 discloses two elongated electrodes (e.g., conductors 18, 20) (col. 2, lines 28-30). Kalnitsky et al. '608 or '791 also discloses that the electrodes (e.g., 18, 20) can be interdigitated, which is equivalent to comb-shaped electrodes (Col. 2, lines 33-37).

Re claim 3, Kalnitsky et al. '608 or '791 discloses that the dielectric seismic mass (e.g. combination of flexible membrane of dielectric material (14) and beam (36)) comprises silicon nitride (Col. 2, lines 56-58). Kalnitsky et al. '608 or '791 also discloses that the dielectric may be a polyamide layer, which is equivalent to a polymer such as Payrylene.

Re claim 4, as depicted in fig. 1, Kalnitsky et al. '608 or '791 discloses the dielectric seismic mass (e.g., flexible membrane made of dielectric material (14)) is perforated by holes (e.g., open ports 38).

Re claim 5, Kalnitsky et al. '608 or '791 discloses the movement of the seismic mass alters the rate of occupation of space by the dielectric material in a fringe field arising between the electrodes (Col. 1, lines 32-36).

Re claim 6, as depicted in fig. 2A, Kalnitsky et al. '608 or '791 discloses the movement of the seismic mass normal to the electrode plane alters the rate of occupation of space by the dielectric material in a fringe field arising between the electrodes (Col. 1, lines 32-36).

Re claim 7, as depicted in fig. 2A, Kalnitsky et al. '608 or '791 discloses the movement of the seismic mass parallel to the electrode plane alters the rate of occupation

of space by the dielectric material in a fringe field arising between the electrodes (Col. 1, lines 32-36).

Re claim 9, as depicted in fig. 3, Kalnitsky et al. '608 or '791 discloses the beam (e.g., flexible membrane 14) is in contact with an anchoring portion (e.g., periphery 32).

Re claim 10, as depicted in fig. 3, Kalnitsky et al. '608 or '791 discloses the beam (e.g., flexible membrane 14) exhibits a linear shape.

Re claim 11, as depicted in fig. 2A, and 3, Kalnitsky et al. '608 or '791 discloses the beam (e.g: flexible membrane 14) is configured to accommodate movement normal to the electrode plane.

Re claim 12, as depicted in fig. 2A, Kalnitsky et al. '608 or '791 discloses the beam (e.g. flexible membrane 14) is configured to accommodate movement parallel to the electrode plane.

Re claim 14, as depicted in fig. 2A, Kalnitsky et al. '608 or '791 discloses the dielectric seismic mass and the beam (e.g. flexible membrane 14) comprise intergral features of a dielectric layer.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 8, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Kalnitsky et al. (5,982,608) or Kalnitsky et al. (6,110,791).

Re claim 8, Kalnitsky et al. '608 or '791 also discloses that the electrodes (e.g., 18, 20) can be interdigitated and interconnected arrays of conductors, which is equivalent to a first, second, third and fourth electrodes (Col. 2, lines 33-37). As depicted in fig. 3A, Kalnitsky et al. '608 or '791 discloses the dielectric seismic mass (e.g., flexible membrane made of dielectric material 14) is perforated by holes (e.g., open ports 38). Kalnitsky et al. '608 or '791 does not specifically discloses that the first hole is between the first and second electrode and the second hole between the third and forth electrodes, wherein the **second hole is offset in pitch** from the first hole. However, Kalnitsky et al. '608 or '791 discloses that the holes (e.g., open ports 38) allow air to move into and out of the gap (e.g., cavity 34_ facilitating movement of the dielectric seismic mass (e.g., flexible membrane made of dielectric material 14) (Col. 3, lines 6-15). Furthermore, the court held in, In re Japikes, 86 USPQ 70 (CCPA 1950), that the no invention would be given in shifting the location of a part to a different location since the operation of the device would not be modified. Therefore, to employ Kalnitsky et al. '608 or '791 on a second hole offset in pitch from the first hole would have been obvious to one of ordinary skill in the art at the time of the invention since this reference explicitly teaches a variable capacitor suitable for use in accelerometers including a dielectric seismic mass with perforated holes overlaying and separated form electrodes.

Allowable Subject Matter

7. Claim13 is objected to as being dependent upon a rejected base claim1, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamiko D. Bellamy whose telephone number is (571) 272-2190. The examiner can normally be reached on Monday - Friday 7:30 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tamiko Bellamy
T.B.
May 20, 2005

HEZRON WILLIAMS
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